

USSR

KIRZHNER, V. M.

"The Behavior of Trajectories of Polyploid Genetic Systems with Migration"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 141-143 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V722, by the author).

Translation: A theorem is proven on the convergence of trajectories for a system of autosomal polyploid populations with migrations. Generations are assumed nonoverlapping, while crossing satisfies the panmixia condition. A proof is presented using the method of differential operators suggested by O. Rayersol.

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KIRZHNER, V. M., TABACHNIKOV, M. I.

"One Problem of Optimal Selection"

Vychisl. mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Equipment -- Collection of Works], No 2, Khar'kov, 1971, pp 20-25 (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V545 by the author's).

Translation: The problem of minimization of the functional

$$J(n_i) = \varphi(n_i) \sum_A p_i + \tau(n - n_i) \sum_B p_i$$
$$(|A| = n_i, |B| = n - n_i, p_i \geq 0)$$

and one technical application are studied.

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UDC: 621.397.621(084.15)

KIRZON, A. G.

"Concerning the Transfer of Geometric Proportions When Projecting a Stereoscopic Image"

V sb. Radioelektronika optich. diapazona (Radio Electronics in the Optical Band--collection of works), Moscow, 1970(1971), pp 45-49 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3G112)

Translation: The paper deals with the general case of determination of the deformation of a three-dimensional image projected stereoscopically onto a screen, which depends on the conditions (geometric parameters) of photography of the object, the conditions of projecting the photographed objects onto the screen, and the conditions of observation of the stereoscopic projection by the viewer. Formulas are derived which relate the coordinates of the stereo model seen by the viewer to the parameters of the photographic and projection processes. Using these formulas for different positions of the viewer, the pattern of deformation of the stereoscopic model observed by the viewer may be found as a function of displacement of the point of observation. Bibliography of two titles. K. Sh.  
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USSR

UDC: 621.397.087.24

KIRZON, A. G.

"Optical Stereovision Parameters for Solving Engineering Problems"

Moscow, V sb. Radioelektronika optich. diapazona (Optical Range Electronics Engineering--collection of works) 1970(1971) pp 41-43 (from RZh--Radiotekhnika, No 4, 1972, Abstract No 4G145)

Translation: Under natural observation conditions, man is capable of varying the accommodation of the eye, and can consequently examine in detail the entire spatial depth on all planes, from the closest to infinity. In observing an image in a stereoscopic device or in stereoscopic projection, the accommodation of the eye, in the author's opinion, does not vary, and the depth of space perception is limited. He proposes estimating the effectiveness of stereovision by the number of different space planes simultaneously perceived in depth. It is shown that this number is proportional to the intergipillary base and inversely proportional to the limiting angle of correct vision. M. N.

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USSR

UDC 612.82:615.781

KIRZON, M. V., TITOV, S. A., and KAMENSKIY, A. A., Chair of  
~~Human and Animal Physiology~~

"Direct Effects of Novocain on the Cerebrum of White Rats"

Moscow, Vestnik Moskovskogo Universiteta, No 1, Jan/Feb 71,  
pp 98-99

Abstract: In an investigation of the effects of novocain on the cerebrum, small volumes of novocain (0.01 ml of 5-12% solutions) were injected into various brain structures (amygdaloid nucleus, substantia nigra, and caudate nucleus) in nonpremedicated white rats. The immediate results observed included: complete immobility, areflexia, fall in respiratory rate from the control 80 to 10 and fewer breaths per minute, and a marked depression of electroencephalographic waves. If the animal did not die from apnea in the first 5 minutes, it gradually recovered during the next hour. Since such a rapid diffusion of the novocain from the site of injection to the respiratory centers was improbable, the authors postulate activation of inhibitory neural reflexes.

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1/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--CHARACTERISTICS OF THE ELECTRICAL ACTIVITY OF SUBCORTICAL AND CORD  
STRUCTURES OF RATS DURING SODIUM FLUOROACETATE POISONING -U-  
AUTHOR-(02)-KIRZUN, M.V., TITOV, S.A.  
COUNTRY OF INFO--USSR  
SOURCE--VESTN. MOSK. UNIV., BIOL., POCHVOVED, 1970, 25(1), 18-25  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--SODIUM COMPOUND, FLUORINATED ORGANIC COMPOUND, POISON EFFECT, .,  
SPINAL CORD, NERVOUS SYSTEM, ELECTROPHYSIOLOGY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1996/0595 STEP NO--UR/0444/70/025/001/0018/0025  
CIRC ACCESSION NO--AP0117823  
UNCLASSIFIED

272 034

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--APO117823

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PATHOL. CHANGES IN ELEC. ACTIVITY OF SUBCORTICAL AND CURD STRUCTURES DURING FLUOROACETATE POISONING ARE DISCUSSED. TWO COMPETITIVE PROCESSES IN THE COURSE OF POISONING WERE REGISTERED. INCREASED EXCITABILITY OF THE RETICULAR THALAMUS NUCLEI, FOLLOWED BY SPASMS AND A PHASE OF DEPRESSED MOTILITY AND INHIBITION OF ELEC. ACTIVITY CHARACTERISTIC FOR BARBITURATE POISONING WERE FOUND.

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KISE, V. A., OSIS, Ya. Ya.

"Study of Algorithms for Location of Quasioptimal Coverage of a Set"

Kibernetika i Diagnostika [Cybernetics and Diagnosis -- Collection of Works], No 5, Riga, Zinatne Press, 1972, pp 197-204 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V838 by the authors).

Translation: Algorithms for determination of quasioptimal coverage of set B with set A are studied, if matrix C is given, the binary ratio of these sets. The first three algorithms are presented in LAPAS. The accuracy of these algorithms for determination of quasioptimal coverage of sets is studied as a function of dimensions of matrix C and probability that any of the elements of matrix C is equal to unity. The algorithms are compared as to accuracy and machine time.

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UDC 8.74

KISE, V. A., OSIS, Ya. Ya.

"Investigation of Algorithms for Finding Quasioptimum Coverage of a Set"

Riga, Kibernetika i diagnostika--sbornik (Cybernetics and Diagnosis--collection of works), vyp. 5, 1972, pp 197-204 (from RZh-Matematika, No 1, Jan 73, abstract No 1V838)

Translation: The authors consider algorithms for finding the quasioptimum coverage of set B by set A if a matrix C is given which presents the binary ratios of these sets. The algorithms "prikrapok 1", "prikrapok 2" and "prikrapok 3" are written in the LYaPAS language. An investigation is made of the accuracy of the given algorithms for finding the quasioptimum coverage of sets as a function of the dimensions of matrix C and the probability that any of the elements of matrix C is equal to unity. The algorithms are compared for accuracy and computer time. Authors' résumé.

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UDC 536.5.081:536.521.082.52

KISEL', A. N."A New, Semiautomatic Spectrocomparator for Metrological Work"

Khar'kov, Ukr. resp. nauch.-tekhn. konf., posvyashch. 50-letiyu metrol. sluzhby USSR, 1972 -- sb. (Ukrainian Republic Scientific and Technological Conference Honoring the 50th Anniversary of the Ukrainian SSR's Metrological Service, 1972 -- Collection of Works), 1972, pp 43-45 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 2, 1973, Abstract No 2.32.935 by V.S.K.)

Translation: On the basis of research that has been done on the factors that determine the accuracy of photoelectric devices (detector noise, light polarization, asymmetry of the input optics, and so on), the author developed the PSK-1 semiautomatic spectropyrometer-comparator, which is used to transmit a broad temperature scale at all stages of the checking process. The comparator is useful for calibrating and comparing thermal tubes in the 0.48-2.5 micron spectral range and in the 400-2,500°C temperature range. The sensitivity threshold at 1,064.43°C, when  $\lambda = 0.6563$ , is 0.5°C, while the comparator's intrinsic instrument error at  $\Delta\mathcal{E}$  is 0.1°C and the mean quadratic error involved in comparing the tubes is 0.31°C. Metrological use of the new comparator to transmit a temperature scale leads to a reduction in the calibration

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KISEL', A. N., Ukr. resp. nauch.-tekh. konf., posvyashch. 50-letiyu metrol. sluzhby, 1972

error of standard thermal tubes that is on the order of 67-80 percent, and this results in a reduction in the degree of error in laboratory and technical pyrometers.

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USSR

UDC 535.243:536.508.14

KISEL', A. N., and FINKEL'SHTEYN, V. YE.

"New Spectrocomparator of PSK Type for Temperature Scale Transmission"

Moscow, Izmeritel'naya Tekhnika, No 9, Sep 71, pp 47-48

Abstract: This article presents a description of new semi-automatic PSK-1 spectrocomparator developed at the Khar'kov State Scientific Research Institute of Metrology (KhGNIIM) with the aim of eliminating fundamental and structural deficiencies of preceding apparatus. A zero modulation method used previously is the basis of the new spectrocomparator with the difference that the current control of a standard temperature-calibrated lamp is accomplished automatically by means of a special servo system and a signal from the load of a synchronous detector. The servo system consists of an integrator with a high time constant (10.000-40.000 sec) and built-in transistor controls in the lamp power supply circuit. Structurally the PSK-1 apparatus consists of a control panel including electronics and a system for lamp current measurement, an optical system and a power supply unit containing two stabilized SIP-30 sources. This spectrocomparator makes it possible to change temperature scale transmission from a visual method to photoelectric method thus increasing the accuracy and work productivity.

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UNCLASSIFIED

PROCESSING DATE--30OCT70

1/2 013

TITLE--HIGHLY LOCAL X RAY MICROANALYZER -U-

AUTHOR--(05)-VASICHEV, V.N., VERESHCHAGIN, YE.N., DERSHVARTS, G.V.,  
KAPLICHNYY, V.N., KISEL, G.D.

COUNTRY OF INFO--USSR

SCURCE--PRIB. TEKH. EKSP. 1970, 1, 217-20

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRGN MICROSCOPE, X RAY SPECTROMETER, MICROCHEMICAL  
ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1988/1476

STEP NO--UR/0120/70/001/000/0217/0220

CIRC ACCESSION NO--AP0106232

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0106232

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ELECTRON MICROSCOPE X RAY MICROANALYZER IS DESCRIBED WHICH MAKES IT POSSIBLE TO CONDUCT AN X RAY SPECTRUM ANAL. OF AREAS WITH A DIAM. SIMILAR TO OR LESS THAN 500 ANGSTROM. RESULTS OF TESTING OF THE LIGHTING SCHEME OF THE DEVICE AND ITS NONDISPERSION SYSTEM OF REGISTRATION OF CHARACTERISTIC SPECTRA ARE PUBLISHED. LINES OF THE CHARACTERISTIC SPECTRUM CAN BE REGISTERED IF THE WT. OF THE PART OF THE MATERIAL UNDER STUDY EQUALS 1.7 TIMES 10 PRIME NEGATIVE 7 G.

UNCLASSIFIED

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UDC 541.123.2:546.824-31'654.3-31+548.824-31'41- 1

KISEL', N. G., LIMAN'T. F., MUDROLYUBOVA, L. F., and CHEREDNICHENKO, I. F.

"CaTiO<sub>3</sub>-La<sub>2</sub>TiO<sub>5</sub> System"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 10, No 3, Mar 74, pp 465-468

Abstract: Samples for studying the CaTiO<sub>3</sub>-La<sub>2</sub>TiO<sub>5</sub> system were produced by reacting an ammonia solution of ammonium carbonate with the chlorates of calcium, lanthanum, and titanium. After washing and drying, the residues were analyzed after heating for 6-12 hours at different temperatures (100-1300° C). Results of x-ray and chemical phase analysis showed that 6-8 hours is sufficient for establishing equilibrium. From the constructed phase diagram it was found that a region of CaTiO<sub>3</sub>-base solid solutions with a perovskite structure is formed. A new phase appears above 1100° C which could not be separated for identification but it was ascertained that this phase is a new compound with a composition close to that of Ca<sub>2</sub>La<sub>2</sub>Ti<sub>3</sub>O<sub>11</sub>. One figure, one table, 13 bibliographic references.

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1/2 018 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--DOUBLE MOLYBDATES AND TUNGSTATES OF RARE EARTH ELEMENTS WITH SODIUM  
-U-  
AUTHOR--(04)-GOLUB, A.M., AGANYAZOV, K.S., KISEL, N.G., NOKHOSOYEV, M.V.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. AMER. 1970, 6(1), 170-2  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--MOLYBDATE, TUNGSTATE, RARE EARTH ELEMENT, SODIUM, X RAY  
ANALYSIS  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1984/0166 STEP NO--UR/0363/70/006/001/0170/0172  
CIRC ACCESSION NO--AP0054962  
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054962

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ORDER TO CONFIRM THE ESTABLISHMENT OF FULL EQUIL. IN THE LN(NO SUB3) SUB3-NA SUB2 MOO SUB4-H SUB2 O SYSTEM, THE ISOMOLAR SERIES OF THE MIXTS. OVER A PERIOD OF 1 AND 2 WEEKS, AS WELL AS OVER 1 AND 3 MONTHS, FROM THE INSTANT OF THEIR PREPN. WERE STUDIED CONDUCTIONOMETRICALLY AND POTENTIOMETRICALLY. THE MIN. IN ELEC. COND. CORRESPONDS TO MIXTS. WITH THE RATIO (LN(NO SUB3) SUB3): (NA SUB2 MOO SUB4) EQUALS 1:2. THIS ATTESTS TO THE FORMATION OF DOUBLE MOLYBDATES OF RARE EARTH METALS. INVESTIGATION OF THE LN(NO SUB3) SUB3-NA SUB2 WO SUB4-H SUB2 O SYSTEM INDICATES THE FORMATION OF SIMPLE TUNGSTATES OF RARE EARTH METALS. X RAY ANAL. OF DOUBLE TUNGSTATES SHOWS THAT THEY BEHAVE ANALOGOUSLY TO DOUBLE MOLYBDATES. AN ENDOTHERMAL EFFECT AT 180-200DEGREES CORRESPONDS TO THE LOSS OF WATER. THE EXOTHERMAL EFFECT AT 400-480DEGREES CORRESPONDS TO THE CRYSTN. OF THE COMPS. NALN(WO SUB4) SUB2 TIMES 0.5H SUB2 O, AND THE EXOTHERMAL EFFECT AT 560-575DEGREES CORRESPONDS TO THE CRYSTN. OF NALN(WO SUB4) SUB2.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--POLYMERIZATION OF VINYL MONOMERS IN LAYER COMPOUNDS OF  
MONTMORILLONITES -U-  
AUTHOR--(04)-ZAYTSEV, YU.S., KISEL, N.G., YENALYEV, V.D., YURZHENKO, A.I.  
COUNTRY OF INFO--USSR  
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 213-217  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--POLYMERIZATION, MONOMER, VINYL COMPOUND, PEROXIDE, MINERAL,  
CHEMICAL STABILIZER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1993/0402 STEP NO--UR/0069/70/032/002/0213/0217  
CIRC ACCESSION NO--AP0113320  
UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113320

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY HAS BEEN MADE OF THE POLYMERIZATION OF VINYL MONOMERS IN LAYER COMPOUNDS OF MONTMORILLONITE USED AS A STABILIZER OF MONOMER EMULSIONS. THE DEPENDENCE OF THE CHANGE IN THE INTERPLANAR SPACES IN MONTMORILLONITE DURING POLYMERIZATION OF VINYL MONOMERS BETWEEN ITS LAYERS ON THE POLARITY OF MONOMERS AND THE NATURE OF PEROXIDE INITIATORS HAS BEEN STUDIED BY ROENTGENOGRAPHY. APART FROM STABILIZING MONOMER EMULSIONS, BENTONITE CLAYS SERVE AS SITES ON WHICH POLYMERS ARE FORMED ON THE SURFACE AND BETWEEN LAYERS OF MONTMORILLONITE PARTICLES.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--REACTION OF MOLYBDENUM TRIOXIDE WITH ALKALI METAL SULFATES IN MELTS

-U-  
AUTHOR--(03)-KOKOT, I.F., MOKHOSOEYEV, M.V., KISEL, N.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TSVET. MET. 1970, 13(1), 87-90.

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--X RAY ANALYSIS, PHASE DIAGRAM, METAL COMPLEX COMPOUND,  
EUTECTIC MIXTURE, MOLYBDENUM OXIDE, LITHIUM COMPOUND, POTASSIUM  
COMPOUND, SULFATE, SODIUM SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1511

STEP NO--0149/70/013/001/0087/0090

CIRC ACCESSION NO--AT0130440

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0130440

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY DTA AND X RAY ANAL. THE PHASE  
DIAGRAMS WERE DETD. FOR LI SUB2 SO SUB4NEGATIVE MOO SUB3 NA SUB2 SO  
SUB4 MOO SUB3, AND K SUB2 SO SUB4 MOO SUB3. LI SUB2 SO SUB4 MOO SUB3  
AND NA SUB2 SO SUB4 MOO SUB3 FORM SIMPLE EUTECTIC SYSTEMS AND K SUB2 SO  
SUB4 MOO SUB3 FORMS A COMPLEX COMPN. (K SUB2 MOO SUB2) MOO SUB3 SO SUB4.  
FACILITY: DONETS. GOS. UNIV., DONETSK, USSR.

UNCLASSIFIED

USSR

UDC 537.582

REKOVA, L. P., MOZGIN, V. V., KISEL', O. V. and FOGEL', YA. M., Physicotechnical Institute of the Academy of Sciences USSR

"Effect of Gases on Thermoion Emission by Plastically Deformed Metals"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No. 3, Mar 71, pp 567-570

Abstract: The effect of oxygen on the emission of  $K^+$  thermoions was used to study the plastic deformation of heated nickel strips during their stretching by a constant load. The idea of the experiment was to establish the mechanism of the effect of a gas on the thermoemission of ions of alkali metals in order to determine the nature of processes occurring under the plastic deformation of metals. According to current assumptions, it was expected that the effect of the action of the gas on thermoion emission of a heated metal, which disappears upon introducing dislocations into the motion with a sufficiently high velocity, should be restored upon stopping dislocations, independent of the method by which the dislocations were stopped. If this is so, the effect can disappear and then be restored upon the application of a stretching load to a metal strip, which will take it first into a state of temperature creep, after which there will then follow

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a state of strengthening of the strip characterized by the disappearance of temperature creep. These changes in the nature of the action of a gas on thermoion emission follow from current ideas about plastic deformation of metals according to which the state of temperature creep is associated with the motion of dislocations and the state of strength is associated with stopping them. These experiments support these hypotheses.

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USSR

UDC: 621.391

KISEL', V. A.

"Transmission of Pulse Signals Through Band Systems"

Moscow, Radiotekhnika, No 2, 1972, pp 36-45

Abstract: The purpose of this paper is to determine the requirements for the frequency characteristics of band systems whose reaction  $g(t)$  for a single pulse has the characteristic that  $g(k\Delta t) = 1$  for  $k = 0$ , and  $g(k\Delta t) = 0$  for  $k = \pm 1, \pm 2, \dots$ , where  $\Delta t$  is the pulse succession interval. It is proved that the undistorted transmission of AM pulse signals through the limited frequency band system is possible only if the system possesses such a characteristic, and it is shown that the use of such systems substantially increases the pulse transmission rate to the point where it is comparable with the rate in low-frequency systems. Problems of this type are important in the design of broad-band radio communications systems with pulse code modulation in which the channel is set by a band filter.

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UDC: 621.397

KISEL', V. A., Odessa Electrical Engineering Institute of Communications  
Ishni A. S. Popov

"An Automatic Corrector of the Amplitude-Frequency Characteristic of a Television Channel"

USSR Author's Certificate No 282408, filed 26 May 69, published 15 Dec 70  
(from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G108 P)

Translation: This Author's Certificate introduces an automatic corrector of the amplitude-frequency characteristic of a TV channel. The device contains a delay line, an adder to which a signal is sent from the taps of the delay line through regulators to whose controlling inputs signals are sent from the adder through a detector, and individual circuits for each regulator consisting of a multiplier, low-frequency filter and full-wave rectifier connected in series. In order to correct the amplitude-frequency characteristic with respect to predetermined arbitrary norms, a unit is connected between the output of the detector and the input of the multipliers which isolates signal values going beyond the predetermined norms. This unit consists of an adder to whose inputs a signal is sent through two

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KISEL', V. A., USSR Author's Certificate No 282408

channels in which subtractors and half-wave rectifiers are connected. The second inputs of the subtractors are connected to the outputs of oscillators which are controlled by the signal from the detector.

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USSR

UDC: 621.372.01-501.12

KISEL', V. A.

"Algorithmizing Tuning of Correctors in Multiplex Communications Systems"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Academic Institutes of Communications. Ministry of Communications of the USSR), 1970, vyp. 51, pp 95-103 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A91)

Translation: So-called coherent (multidimensional or multichannel) correctors are used to compensate image and mutual distortions in the channels of multiplex communications systems. Methods are proposed for adjusting these correctors for optimum (in the sense of a square-law criterion) compensation of image and mutual distortions in multiplex systems. Resumé.

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UDC 622.323(477)6)

SKRIPNIK, V. A., ZHELEZNOV, P. A., KLYAROVSKIY, G. V., and KISEL',  
V. A.

"Prospects for Development of Lelyakov Petroleum Deposits With Consideration of Liquid Overflow Between the  $P_{1+2}$  and  $P_3$  Strata"

Kiev, Neftyanaya i Gazovaya Promyshlennost', No 6, Nov-Dec 70, pp 30-33

Abstract: Three levels of oil deposits are being exploited in Lelyakov area:  $P_{1+2}$ ,  $P_3$ , and  $K_1$ .  $P_{1+2}$  yields 1.5-30 t/day,  $P_3$  -- 15-210 tons per day, while  $K_1$  is only of secondary importance. Oil overflows from  $P_3$  level to  $P_{1+2}$  where there is no clay barrier between them, and in wells exploiting both levels. The pressure in  $P_{1+2}$  layer is about 26-30  $\text{kg/cm}^2$  lower than in  $P_3$ . Lelyakov deposits are among the richest ones in Ukraine. It is proposed to increase the yield to about 200-250 t/day by drilling more wells, and preventing the overflow from  $P_3$  to  $P_{1+2}$  by building up the pressure in  $P_{1+2}$  through the input of water. It has been calculated that approximately 3 million  $\text{m}^3$  of water per year will be needed to keep the pressure in  $P_{1+2}$  at 160  $\text{kg/cm}^2$ .

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USSR

KISELEV, A., Professor, Director of the Central Scientific Research Institute of Hematology and Blood Transfusion, Ministry of Health, USSR and SKURKOVICH, S., Professor

"Hyperimmune Antistaphylococcal Plasma"

Moscow, Meditsinskaya Gazeta, 27 Aug 71, p 3

Abstract: Because the use of antibiotics in Staphylococcal infections has produced strong drug-resistant staph strains, four years ago the Institute developed hyperimmune antistaphylococcal plasma and gamma-globulin preparations aimed at achieving passive immunity without allergic reaction in the patient. Antistaphylococcal plasma is prepared by means of plasmapheresis from the blood of immunized volunteer donors after antibodies appear in it. Part of the immune plasma is fractionated and hyperimmune antistaphylococcal gamma-globulin is isolated from it with a concentration of antitoxic antibodies 6-8 times higher than in the initial plasma. The therapeutic action of both preparations is exceptionally high. Antistaphylococcal plasma, which can be stored either frozen or dried, has been used in cases of newborn, puerperal, postoperative, and posttraumatic sepsis, Staphylococcal pneumonia, meningitis, osteomyelitis, localized acute septic staph infections, etc. A  
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KISELEV, A., Meditsinskaya Gazeta, 27 Aug 71, p 3

marked clinical effect is observed within 24 hours and mortality from staph sepsis has been substantially reduced. The use of antistaphylococcal plasma is being investigated in connection with heart transplant surgery, urology, and diseases of the eye, ear, nose, and throat.

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1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--DEEP FREEZING BLOOD -U-  
AUTHOR--(02)-VINOGRADINKEL, F., KISELEV, A. K  
COUNTRY OF INFO--USSR  
SOURCE--MEDITSINSKAYA GAZETA, SEPTEMBER 11, 1970, P 3, COLS 1-3  
DATE PUBLISHED--11SEP70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BLOOD PRESERVATION, FREEZING  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3008/1796 STEP NO--UR/9034/70/000/000/0003/0003  
CIRC ACCESSION NO--AN0138743  
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70  
CIRC ACCESSION NO--ANO138743  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ACCORDING TO THE ARTICLE, ITS  
AUTHORS COLLABORATED WITH A TEAM OF UNNAMED RESEARCHERS AT THE CENTRAL  
INSTITUTE OF HEMATOLOGY ON THE DEVELOPMENT OF THEORETICAL ASPECTS OF  
DEEP FREEZING BLOOD. TWO METHODS OF DEEP FREEZING ARE DESCRIBED,  
HOWEVER, IT IS NOT CLEAR WHETHERE THEY WERE DEVELOPED IN THE U.S.S.R. OR  
ABROAD. FACILITY: MINISTRY OF PUBLIC HEALTH, U.S.S.R.  
FACILITY: BLOOD CONSERVATION LABORATORY.

UNCLASSIFIED

KISELEV, A.A.

FEASIBILITY OF GENERATING MEGAGAUSS  
MAGNETIC FIELDS USING HIGH-PRESSURE  
COMPRESSED GAS LITHINGS

JPRS 59459  
9 JULY 1973

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Article by Ye. P. Vasil'kov, A. A. Vedenov, A. D. Bogdanov, V. S. Gerasimov, G. G. Kashchinskii, A. A. Kiselev, F. G. Kulikov, V. V. Chernushin; Leningrad, Zhurnal Tekhnicheskoy Fiziki, Ruzhansk, Vol 43, No 7, 1973, signed to press 8 June 1971, pp 479-481

The results of calculation of a setup, designed for generating a megagauss pulse magnetic field in a large volume, are presented in this article. The magnetic field is amplified by compression in a cylindrical metal case, pushed by high-pressure gas (1,000-2,000 atm). The expected energy in the compressed magnetic field is several MJ and the lifetime of the field is of the order of 10 usec. In contrast to apparatus using explosives, the examined device is nondestructive. In contrast to devices used for compressing a shell with the energy of an electromagnetic field, the examined system does not experience the problems of super-power storage units and electromagnetic energy commutators.

Introduction

Pulsed megagauss fields, especially in a large volume and with high (-1 MJ and above) energies, are very important in modern industry. First, they may be used for solving the problem of controlled thermonuclear synthesis [1]. Investigating matter at superhigh pressures [2], generating a pulse of electromagnetic energy at high power and energies (10<sup>11</sup>-10<sup>13</sup> W, 10<sup>5</sup>-10<sup>7</sup> J). The literature contains the results of analysis of pulsed megagauss fields by collapsing a metal case using explosives [3] or the energy of a capacitor bank [4-6]. The use of explosives is technologically difficult and leads to total destruction of the system; the use of capacitor banks is limited for practical purposes to the energy level of 10<sup>7</sup>-10<sup>8</sup> J.

The use of the energy of compressed gas for collapsing a cylindrical metal shell (liner), amplifying a magnetic field by "adiabatic" compression

by the conducting cylinder, the geometries of which are parallel to the magnetic force lines, is considered promising. The advantages of this method are: 1) the system is nondestructive; the mechanical requirements on strength are the same as in the case of the apparatus that uses electromagnetic energy, since the magnetic pressure that collapses the liner must have the same magnitude (1,000-2,000 atm); 2) rapid application of external pressure on the liner in the examined system does not require the development of high-power commutating systems; the electromagnetic set-up requires presently unavailable storage units and electromagnetic energy commutators ( $10^6-10^9$  J,  $10^{11}-10^{12}$  W); explosive systems require synchronous actuation of the detonators; 3) the use of compressed gas makes it possible to attain more efficient transmission of energy to the field in comparison with explosives and current inductive storage systems.

The most important part of the pneumatic apparatus is the system for breaking a cylindrical diaphragm that holds back all the gas pressure (by means of a cylindrical support grille). Our apparatus incorporates a high-speed magnetic "rotor-plunger" type coil [7], which generates the pulse that releases magnetic pressure.

In contrast to electromagnetic systems, the rate of collapse of the liner in a pneumatic system is limited to the speed of sound in gas. When hydrogen is used at room temperature a radial liner velocity of 103 cm/sec is completely feasible and is attainable for most applications. Thus, in the case of thermonuclear experiments (compression of deuterium plasma in a magnetic field), the characteristic time of adiabatic compression is determined by a velocity of  $\sim 10^9$  cm/sec, which, finally, requires a very long magnetic field [8].

5). Description of Apparatus

The apparatus for storing and converting energy (Figure 1) consists of steel body 5, which houses support grate 3 and steel diaphragm 2, installed on it. In the cavity between the diaphragm and the body is gas ( $H_2$  or He) under a pressure of 1,000-2,000 atm.

The diaphragm is a thin-wall steel cylinder with a wall thickness of the order of 1 mm, which is necessitated by the need for rapid and synchronous opening of all parts of the diaphragm (12).

Magnetic diaphragm rupture system 4 consists of six turns (15), wound on insulator. The design of the elements of the magnetic system is illustrated in Figure 2.

The diaphragm rupture system is powered by pulsed capacitors through coaxial sealed cables 6, insulated for 50 kV. Inside the support grate, at a distance of 1-2 mm from its inner surface, is copper liner 1, 140 mm in diameter with a wall thickness of 1-2 mm. An initial magnetic field ( $B_0 = 1.2 \cdot 10^6$  G) is developed beforehand in the cavity of the liner.

USSR

UDC 539.182/.184

GLEMBOTSKIY, I. I., KAROSENE, A. V., KISELEV, A. A., SAVUKINAS, A. Yu.,  
SHCHADZHYUVENE, S. D., YUTSIS, A. P.

"Theoretical Study of the Absorption of Soft X-Rays by Metal Films of  
Lanthanum and Cerium"

Lit. fiz. sb. (Lithuanian Physics Collection), 1972, Vol. 12, No. 2,  
pp 235-244 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D30)

Translation: The problem of the interpretation of an experimentally estab-  
lished structure of the absorption spectra of rare earth metals La and Ce  
on both sides of the absorption boundaries  $N_{IV,V}$  was studied theoretically.  
The given structure is explained by the transitions  $4d^{10}4f^n \rightarrow 4d^9 4f^{n+1}$  in  
triply charged ions of these elements. Interpretation of maxima of the  
absorption curves by discrete transitions is verified by computation of the  
strengths of the lines. The calculations were conducted with the aid of  
numerical solutions of ordinary Hartree-Fock equations. The results show  
that experimental maxima are well identified by the atomic transitions  
 $4d^{10}4f^n \rightarrow 4d^9 4f^{n+1}$  both as to the position of the maxima and as to their  
relative strengths of the lines. Authors abstract.

1/1

- 61 -

1/2 011 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--PREPARATION AND EXAMINATION OF HIGH PURITY SILICA GEL FOR GAS  
CHROMATOGRAPHY -U-  
AUTHOR--(05)-AKSHINSKAYA, N.V., ZAYTSEVA, G.YE., KISELEV, A.V., NIKITIN,  
YU.S., STRIZHKOV, B.V. K  
COUNTRY OF INFO--USSR  
SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 160-166  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--SILICA GEL, CHEMICAL PURITY, GAS CHROMATOGRAPHY, ORGANIC  
SILANE, THERMAL EFFECT, GEOMETRIC FORM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1993/0392 STEP NO--UR/0069/70/032/002/0160/0166  
CIRC ACCESSION NO--APJ113310  
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113310

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GEOMETRIC MODIFICATION OF HIGH PURITY SILICA GEL PREPARED BY HYDROLYSIS OF TETRAETHOXYSILANE HAS BEEN CARRIED OUT UNDER VARYING HYDROTHERMAL TREATMENT CONDITIONS. IT HAS BEEN SHOWN POSSIBLE TO PREPARE SAMPLES WITH SURFACE AREA FROM 415 TO 2 M PRIME<sup>2</sup>-G AND MEAN PORE SIZE FROM 90 TO 12500 ANGSTROM. THE RETENTION TIMES OF SPECIFICALLY ADSORBED AROMATIC HYDROCARBONS AND POLAR ORGANIC COMPOUNDS ON HIGH PURITY MACROPOROUS SILICA GEL ARE LESS AND THE CHROMATOGRAPHIC PEAKS OF THESE SUBSTANCES MORE SYMMETRICAL THAN FOR COMMERCIAL MACROPOROUS SILICA GEL OF SIMILAR GEOMETRIC STRUCTURE CONTAINING SESQUIOXIDES AS IMPURITIES.

UNCLASSIFIED

USSR

UDC: 621.378.3

BELYAYEV, Yu. N., RISELEV, A. M., and FREYDMAN, G. I.

"Laser with Two Interaction Regions"

Gor'kiy, Izvestiya VUZ--Radiofizika, vol. 14, No. 8, 1971, pp 1182-1188

Abstract: This article is a sequel of a letter written to the editor of the ZhETF (Journal of Experimental and Theoretical Physics, 9, 1969, p 441) by the three authors noted above, in which the possibility of designing a laser with a high transformation coefficient and high output power, using prismatic reflectors whose reflection factor is independent of the frequency within a broad range, was demonstrated. This laser, however, suffered from defects which were eliminated in a new version. The present article describes experiments performed with this second version, which permits a frequency tuning range of 4800 Å, from 9600 to 14,400 Å. A diagram of the experimental apparatus is provided and the experimental method explained. The pumping radiation was obtained from the second harmonic of a neodymium laser with a transparent gate, from which longitudinal or transverse modes could be obtained. A curve

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USSR

BELYAYEV, Yu. N., et al., Izvestiya VUZ--Radiofizika, Vol 14, No 8, 1971,  
pp 1182-1188

plotted for the efficiency of the laser under test showed it to reach a level of 12%. The authors are members of the Scientific Research Radiophysical Institute.

2/2

USSR

UDC 621.315.592(088.8)

KISELEV, A. M., LEZHEBOKOV, I. I., NAROYCHIK, S. S., NIKOLAYEV, A. A., OSOVSKIY, M. O., SELIVANOV, P. YA., SHKLYAREVSKIY, V. K.

"Procedure for Automatic Regulation of the Process of Noncrucible Zone Melting"

USSR Author's Certificate No 276016, Filed 24 May 68, Published 6 Oct 70  
(from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G480)

Translation: A procedure is introduced for automatic regulation of the process of noncrucible zone melting by keeping the ingot diameter constant by means of a signal received as a result of measuring the effect of the projection of the zone on a photoreceiver for controlling the ingot diameter. To improve accuracy of regulation, a profile of the zone located directly on the crystallization front is projected on the photoreceiver for controlling the diameter of the ingot by means of a crystallization-front tracking system.

1/1

USSR

UDC: 534.222.2

DERIBAS, A. A., KISELEV, A. N., KUZ'MIN, R. Ye., CHAGELISHVILI, E. Sh.

"Interaction Between Shock Waves and Ceramals"

V sb. Dinamika sploshn. sredy. Vyp. 8 (Dynamics of a Continuous Medium-- collection of works, No 8), Novosibirsk, 1971, pp 103-117 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B231)

Translation: The article contains a report on the results of calculations of the change in parameters of shock waves formed by detonation of an explosive charge as these waves propagate in three-component ceramals. The alloys were compositions made up of tungsten carbides -- chiefly WC -- and a softer metal -- cobalt. Two cases of interaction are calculated: propagation in a semi-infinite layer of material of a plane shock wave formed by detonation of a charge located on the surface of the material, and the action of a sliding detonation wave on a material surface. The system of equations used in the calculations contains equations of conservation of mass and momentum for the detonation and shock waves, and equations of state for the ceramals and the products of the explosion. The results of the calculations are given in tables and graphs.

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USSR

DERIBAS, A. A. et al., Dinamika sploshn. sredy. Vyp. 8, Novosibirsk, 1971, pp 103-117

To carry out the calculations experimentally by the method of reflection, the adiabatic shock curve was determined for VK-8 alloy in specimens 12 mm in diameter and 3-4 mm thick. The dimensions of the particles of hard carbide phase and softer cementing cobalt phase were of the order of 0.5-10  $\mu$ . The resultant adiabatic shock curve in the form of a linear relation between the wave velocity  $D$  and the mass velocity  $u$  is given as  $D = 4.52 + 2.28u$  km/s, and is valid over the pressure range of approximately  $10^{10}$ - $6 \cdot 10^{10}$  N/m<sup>2</sup>. A method is proposed for calculating the adiabatic shock curves of three-component systems which utilizes knowledge of the adiabatic shock curves of each individual component. The adiabatic shock curve calculated for VK-8 alloy coincides satisfactorily with the experimental curve. The results of calculations of the adiabatic shock waves for WC, VK-11, VK-15, VK-20, VK-25 and VK-30 are given. It is pointed out that the results of experiments on x-ray analysis of the study specimens retained after impact compression to high pressures enable use of the calculated adiabatic shock curves in the pressure interval up to  $2 \cdot 10^{11}$  N/m<sup>2</sup>. Bibliography of 8 titles. O. K. Rozancv.

2/2

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--THE ROLE OF ENDOCRINE FACTORS IN THE ORIGIN OF OTOSCLEROSIS -U-  
AUTHOR--(02)-KOSTROV, N.I., KISELEV, A.S.  
COUNTRY OF INFO--USSR  
SOURCE--ZH USHN NOS GORL BOLEZ 30(1): 26-31. 1970  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--EXCRETION, ACTH, SODIUM, POTASSIUM, ION, ADRENAL CORTEX,  
ENDOCRINE SYSTEM, INNER EAR  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3009/0184 STEP NO--UR/0593/70/030/001/0026/0031  
CIRC ACCESSION NO--AP0139047  
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139047

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN WOMEN SUFFERING FROM OTOSCLEROSIS THERE IS A TENDENCY TO AN INCREASE IN THE EXCRETION OF 17-KETOSTEROIDS AND A RISE IN THE CONCENTRATION OF 17-OXYSTERIODS IN THE BLOOD. THE EOSINOPENIC REACTION TO THE ADMINISTRATION OF 25 UNITS OF ACTH IS DISTINCT. THE CONCENTRATION OF NA IONS IS RAISED AND THAT OF K IONS IS DECREASED. ALL THIS INDICATES ENHANCEMENT OF HORMONAL ACTIVITY OF THE ADRENAL CORTEX. CLINICAL OBSERVATIONS ARE GIVEN FOR A PATIENT SUFFERING SIMULTANEOUSLY FROM THE ITSENKO-CUSHING SYNDROME AND OTOSCLEROSIS, IN WHOM WAS NOTED A SUBSTANTIAL RISE IN THE EXCRETION OF 17-KETOSTEROIDS AND ALTERATION OF THE FUNCTION OF THE SEX GLANDS (IRREGULAR CYCLE AND DISTURBANCE OF THE NORMAL CORRELATIONS OF VARIOUS ESTROGEN FRACTIONS). FACILITY: S. M. KIROV MIL.-MED. ACAD., LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 541.183

BELYAKOVA, L. D., KEYBAL, V. I., and KISELEV, A. V., Institute of Physical Chemistry, Academy of Sciences, USSR, Chemical Faculty at the Moscow State University Ireni M. V. Lomonosov

"Gas-Chromatographic Study of the Adsorption of Carbon Dioxide on NaX Zeolite"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 9, Sep 70, pp 2345-2349

Abstract: Isotherms of the molecular adsorption of  $\text{CO}_2$  on the NaX zeolite crystals with and without a binder were calculated for temperature range 70-180° on the basis of the theory of nonideal equilibrium chromatography. These isotherms agree with data obtained from static measurements carried out at 150 and 170°C. From the data obtained it was possible to calculate the relationship between isosteric heats of adsorption of  $\text{CO}_2$  and the adsorption values for low saturation levels of the surface of zeolites. The values agree with those obtained from calorimetry data, with consideration of the heat capacity of the adsorption system zeolite- $\text{CO}_2$ .

1/1

USSR

UDC 621.317.8

KISELEV, A. V.

"High Voltage Pulse Wire Resistors of the Nanosecond Range"

Mikroprovod i pribory soprotivl. -- V sb. (Microwiring and Resistors -- Collection of Works), No 8, Kishinev, Kartya Moldovenyaska Press, 1971, pp 153-157 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10V319)

Translation: The requirements imposed on resistors for matched active loads and power dividers used in high voltage pulse equipment (the wide band nature, high disruptive strength, stability, and so on) are presented. The structural design of a multisection resistor in a plexiglas case is described. Simplified calculation formulas and test results are presented. The labor consumption of winding them, which is an obstacle to their broad application, is noted. There are 5 illustrations and a 5-entry bibliography.

1/1

- 40 -

USSR

UDC 669.721.472(088.8)

ZUYEV, N. M., IVANOV, A. B., VUKOLOV, V. V., SHARUNOVA, G. M., SVALOV, G. N., IRTEGOV, N. N., SABUROV, V. F., SHCHELKHONCOV, A. A., GRUDOVSKIY, N. P., and KISELEV, A. V., All-Union Scientific Research and Design Institute of Aluminum, Magnesium, and Electrode Industry, Bereznikovskiy Titanium-Magnesium Combine

"Method of Cutting-Off the Electrolyte Supply of a Production Line Magnesium Electrolytic Reduction Cell"

USSR Author's Certificate No 260905, filed 21 Oct 68, published 5 May 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G135 P)

Translation: A method is proposed for switching-off the electrolyte supply to a production line magnesium electrolytic reduction cell for subsequent diffusion of scum by increasing the temperature of the electrolyte and the concentration of magnesium chloride. To avert disruption of the operation of the production line electrolytic reduction cell at the input into the cathode cell of the electrolytic reduction cell, shields are placed, which separate the working space of the electrolytic reduction cell from the electrolyte flow in the distribution canal.

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USSR

UDC 546.224

BELYAKOVA, L. D., KISELEV, A. V., MIKHAYLENKO, I. Ye., SOLOYAN, G. A., and SPITSYN, V. I., Academician

"Gas-Chromatographic Study of the Effect of Radioactive Radiation and Heat Treatment on the Adsorption Properties of Magnesium Sulfate"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 1, March-April 1971, pp 88-90

Abstract: The procedure and results of a gas-chromatographic study of the effect of radioactivity and heat treatment on the adsorption properties of magnesium sulfate are presented. The initial magnesium sulfate samples contained about 1% water, and the variation of their adsorption properties with respect to n-hydrocarbons and benzene as a result of the removal of this water during calcination was studied. Curves are presented for the retained volumes of n-nonane and benzene as a function of the calcining time of  $MgSO_4$  at  $400^\circ$  and  $500^\circ C$  and the ratios of the retained volumes of benzene measured at a column temperature of  $245^\circ$  to n-nonane (column temperature  $200^\circ$ ) as a function of the calcining time of  $MgSO_4$ . It was found that radioactive samples of sulfates containing  $SO_4^{2-}$  ions with  $S^{35}$  exhibit appreciably stronger adsorption of hydrocarbons, the molecules of which belong to group B (containing high-bonds) 1/2

USSR

BELYAKOVA, L. D., et al, Doklady Akademii Nauk SSSR, Vol 197, No 1, March-April 1971, pp 88-90

and to group A (containing only  $\sigma$ -bonds) by comparison with nonradioactive sulfates. Removal of water during calcining increases the adsorption of both groups of hydrocarbons. The specificity of molecular adsorption of aromatic hydrocarbons, which reaches a maximum after calcining at 400° for 5 hours, increases especially sharply.

2/2

- 83 -

Acc. Nr:

*K*  
*AP0036527*

Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1,  
pp 41-48

ADSORPTION AND ADSORPTION HEATS  
OF VAPORS ON GEOMETRICALLY MODIFIED SILICA GELS

Yekabson, Ya. Ya.; Kiselev, A. V.; Kyznetsov, B. V.;

Nikitn, Yu. S.

The measurements of the adsorption extent and adsorption heats of water and benzene vapors have shown that macroporous silica gels obtained by hydrothermal treatment in an autoclave followed by calcination at 900 and 1000° for 6—10 hours and rehydroxylation contain very few ultrapores and in respect to their surface chemistry are similar to silica without ultrapores. A longer calcination of macroporous silica gel at 1000° leads to the appearance of microcracks in it and to an increase of its ultraporosity.

*D.R.*

*1/1*  
REEL/FRAME

19721375

*7*

Acc. Nr. AP0053895 - Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR0076

115106t Molecular theory on the adsorption of simple molecules on nonporous ionic crystals. II. Statistical calculation of thermodynamic properties of argon adsorbed on potassium chloride. Kiselev, A. V.; Lopatkin, A. A.; Razumova, E. E. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Zh. Fiz. Khim.* 1970, 44(1), 150-4 (Russ). Configurational integrals and adsorption potentials  $\phi(T)$  of Ar adsorbed on KCl crystals were calcd., and differential thermodynamic functions  $U_s$ ,  $\mu_s$ , and  $S_s$  (molal energy of adsorption, chem. potential of adsorption, and entropy of adsorption) of adsorbed Ar were obtained from statistical thermodynamic calcns. for low coverage of the surface. Calcd. isosteric heats of adsorption ( $-Q_{st} = \Delta H_s = \phi(T) - RT$ ) agreed well with exptl. values obtained for adsorption of Ar on the face of 100 KCl crystals. Good agreement for low and medium coverages ( $\theta$ ) was also found for calcd. and exptl.  $\Delta\mu_s$  and  $\Delta S_s$  as a function of  $\theta$ . Differential heat capacity of adsorbed Ar was estd. as 0.3 cal/degree mole. The mobility of the adsorbed Ar atom was high enough so that it could be moved from one site to another not only by gas phase transfer but also through 2-dimensional diffusion in the adsorption layer.

J. Hala J

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REEL/FRAME  
19830972

C.K.

18

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--SPECTRAL AND ENERGY MANIFESTATION OF THE INTERACTION OF THE  
HYDROXYL GROUPS OF A SILICA SURFACE WITH TRIETHYLAMINE, PYRIDINE,  
AUTHOR--(03)-DAVYDOV, V.YA., KISELEV, A.V., KUZNETSOV, B.V.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 1-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--TRIETHYLAMINE, DIOXANE, FURAN, HYDROXYL RADICAL, ADSORPTION,  
SILICA  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1995/1399 STEP NO--UR/0076/70/044/001/0001/0008  
CIRC ACCESSION NO--AP0116846  
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116846

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENCES OF THE ADSORPTION HEAT ( $\Delta Q_{\text{SUBOH}}$ ) OF ET SUB3 N, PYRIDINE (I), DIOXANE (II), AND FURAN (III) ON A HYDROXYLATED SURFACE OF SILICA GEL WERE MEASURED. THE CHANGES OF THE VIBRATIONAL FREQUENCY ( $\Delta \nu_{\text{SUBOH}}$ ) OF HYDROXYL GROUPS AFTER ADSORPTION OF ET SUB3 N, I, II, AND III ON SILICA GEL WERE DETD. THE ENERGY OF THE SPECIFIC INTERACTION OF THE SURFACE HYDROXYL GROUPS WITH ADSORBATES DECREASED STRONGLY WHEN ELECTRON D. IN THE ADSORBATE MOL. WAS DISTRIBUTED MORE UNIFORMLY DUE TO THE MOL. CONJUGATION.  $\Delta Q_{\text{SUBOH}}$  AND  $\Delta \nu_{\text{SUBOH}}$  WERE APPROX. PROPORTIONAL FOR WEAK SPECIFIC INTERACTIONS. WHEN THE SPECIFICITY INCREASED,  $\Delta \nu_{\text{SUBOH}}$  INCREASED MORE RAPIDLY THAN  $\Delta Q_{\text{SUBOH}}$ . CHEM. AND PHYS. HETEROGENEITY WAS DISPLAYED MORE DISTINCTLY AT WEAK INTERACTIONS. FACILITY: MOSK. GDS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--THERMODYNAMIC STUDY OF THE TRANSITION OF ADSORBED BENZENE TO A  
CRYSTALLINE STATE -U-  
AUTHOR--(05)-BEREZIN, G.I., KISELEV, A.V., KOZLOV, A.A., KUZNETSOVA, L.V.,  
FIRSOVA, A.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 541-3 K  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--BENZENE, CRYSTAL, HEAT CAPACITY, ADSORPTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1995/1422 STEP NO--UR/0076/70/044/002/0541/0543  
CIRC ACCESSION NO--AP0116869  
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116869

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRANSITION OF C SUB6 H SUB6, ADSORBED IN A POROUS ADSORBENT, FROM THE STATE OF CAPILLARY CONDENSATE TO A CRYST. PHASE OCCURS AT 0 TO MINUS 50DEGREES. THIS WAS EVIDENCED BY A SHARP MAX. IN THE TEMP. DEPENDENCE OF THE HEAT CAPACITY OF ADSORBENT CONTG. C SUB6 H SUB6 IN THE ABOVE TEMP. INTERVAL. THE TRANSITION OF ADSORBED C SUB6 H SUB6 TO THE CRYST. PHASE IS ACCOMPANIED BY A SHARP DECREASE IN THE MAX. ADSORPTION CAPACITY A SUBS. THE VALUES A SUBS WERE VIRTUALLY CONST. BELOW AND ABOVE THE TEMP. INTERVAL OF PHASE TRANSITIONS. FACILITY: INST. FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--ADSORBED LAYERS OF BENZENE AND N HEXANE ON GRAPHITIZED CARBON BLACK  
STUDIED FROM HEAT CAPACITY DATA -U-  
AUTHOR--(03)-BEKEZIN, G.I., KISELEV, A.V., SINITSYN, V.A.

COUNTRY OF INFO--USSR

SOURCE--Zh. FIZ. KHIM. 1970, 44(3), 734-40

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--BENZENE, HEXANE, CARBON BLACK, HEAT CAPACITY, ADSORPTION,  
ISOTHERM, VAN DER WAALS EQUATION, COMPLEX COMPOUND

CENTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1196

STEP NO--UR/0076/70/044/003/0734/0740

GIRC ACCESSION NO--AP0128614

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128614

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RELATION BETWEEN HEAT CAPACITY OF N HEXANE AND C SUB6 H SUB6 ADSORBED ON C BLACK AND THE AMT. ADSORBED ON THE SURFACE WAS DETD. THIS RELATION AS WELL AS ADSORPTION ISOTHERMS AND THE DEPENDENCE OF THE DIFFERENTIAL HEAT OF ADSORPTION ON THE AMT. ADSORBED CAN BE DESCRIBED SATISFACTORILY BY MODELS TAKING INTO ACCOUNT ADSORBATE ADSORBATE INTERACTIONS IN THE 1ST ADSORBED LAYER. THUS, THE STATE OF ADSORBED C SUB6 H SUB6 CAN BE DESCRIBED BY VAN DER WAALS TYPE 2.DIMENSIONAL EQUATION OF STATE WHEREAS THAT OF N HEXANE IS DESCRIBED BY A MODEL ASSUMING THE FORMATION OF 2 DIMENSIONAL COMPLEXES OF ADSORBED MOLS. FACILITY: INST. FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--CURRENT PROBLEMS OF FREEZING BLOOD -U-  
AUTHOR--(02)-VINOGRADFINNEL, P.R., KISELEV, A.YE. K  
COUNTRY OF INFO--USSR  
SOURCE--PREGL. GEMATOL. PERELIV. KROVI 1970, 15(4), 3-12  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--FREEZING, BLOOD PRESERVATION, BLOOD STORAGE, ERYTHROCYTE,  
LIQUID NITROGEN, ADENOSINE TRIPHOSPHATE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605004/C06 STEP NO--UR/90B0/70/015/004/0003/0012  
CIRC ACCESSION NO--AP0139619  
UNCLASSIFIED

272 025

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0139619

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. AND CLIN. EVIDENCE CONCERNING LONG TERM STORAGE OF FROZEN ERYTHROCYTES IS REVIEWED. BOTH FAST FREEZING IN LIQ. N WITH THE USE OF SMALL CONCNS. OF GLYCEROL AND SLOW FREEZING AT MINUS 60DEGREES TO MINUS 70DEGREES WITH THE USE OF HIGH CONCNS. OF GLYCEROL ARE APPLICABLE. THE PROTECTING SOLN. USED BY THE AUTHORS FOR FAST FREEZING CONTAINS GLYCEROL (15PERCENT), MANNITOL, AND NACL IN A 1:1 MIXT. WITH THE RED BLOOD CELLS. AFTER LONG TERM STORAGE AND THAWING, THE PROPORTION OF DAMAGED ERYTHROCYTES DOSE NOT EXCEED 2-5PERCENT; THE AMT. OF HB DOES NOT EXCEED 1.5PERCENT; THE CONC. OF ATP IN THE CELLS IS 4.2-5.2 MGPERCENT; THE GLYCOLYTIC ACTIVITY IS 80-90PERCENT OF THE ORIGINAL; THE INTRACELLULAR CONC. OF K IS 300-350 MGPERCENT AS COMPARED WITH THE ORIGINAL 370-400 MGPERCENT; THE HALF LIFE OF THE CELLS IN THE CIRCULATION OF THE RECIPIENT IS MORE THAN 30 DAYS. THE TIME OF STORAGE AFTER THAWING MAY BE INCREASED BY THE ADDN. OF INOSINE AND ADENINE. THE BEST EXTRACELLULAR AGENT EXAMD. WAS POLY(VINYLPYRROLIDONE) (PVP). PVP DOES NOT FORM COMPLEXES WITH BLOOD PROTEINS. IN SUSPENSIONS OF ERYTHROCYTES FROZEN WITH PVP (MOL. WT. 25,000, FINAL CONC. 8PERCENT) IN THE PROPORTION OF 1:1 AND WITH THE ADDN. OF ALBUMIN (FINAL CONC. 1PERCENT), 95PERCENT OF THE CELLS WERE FOUND UNDEAMAGED AFTER THAWING. PVP WITH A MOL. WT. OF 12,600 IN THE PRESENCE OF ALBUMIN HAS SIMILAR PROTECTIVE ACTION; ITS ADVANTAGE IS IN ITS BEING FULLY EXCRETED FROM THE BODY WITHIN 24 HR AFTER TRANSFUSION. THE POSSIBILITY OF USING POLYMERS BASED ON STARCH WAS CONSIDERED. FACILITY: ISENT. INST. GEMATOL. PERELIV. KROVI, MOSCOW, USSR.

UNCLASSIFIED

Precision Mechanical & Optical

USSR

UDC 621.373:535

DUBKOV, V. I. and KISELEV, B. A.

"Photomixing of the Basic and Reference Laser Beams During Analysis of the Frequency Composition of Laser Radiation by the Method of Optical Heterodyning"

Leningrad, Optika i Spektroskopiya, Aug 73, pp 325-327

Abstract: A relationship is derived between the modulation depth of the beat signal during optical heterodyning with an external heterodyne and the degree of difference of the wave-front curvature radii. Consideration is given to a photomixing method which provides a simultaneous complete frequency analysis of polymodal laser radiation. It is shown that when the method of optical heterodyning with an external heterodyne is used for this purpose, a drop in the value of the modulation depth by about one order of magnitude involves no significant difficulties in registration of the beat spectrum, since adequate power of the laser beams and the narrow-banded nature of the receiving and registration channel provide a high signal/noise ratio, and the other space effects that act upon the modulation depth may be reduced to a minimum by adjustment of the interfering beams. 1 table. 8 references.

1/1

USSR

UDC 678.675:678.06-419.8:677.521

CHUDINA, L. I., TANUNINA, P. M., LITOVCHENKO, S. I., CHERVINSKAYA, M. A.,  
CHEEDASOV, M. V., VOROB'YEV, V. D., VLASOVA, K. N., KISELEV, B. A., and  
DAVYDOVA, I. F.

"Polyimides and Polybenzimidazols for Plexiglasses and Cements"

Moscow, Plasticheskiye Massy, No 4, 1973, pp 15-17

Abstract: The physical and chemical properties were determined for a number of thermoplastics -- such as the polyimides (PI), polyamidoimides (PAI), and polybenzimidazols (PBI) -- forming 15-68% solutions with different solvents. The PAI and PBI plus three of the PI resins formed linear structures; two of the PI resins formed a three-dimensional structure. The linear resins have a greater strength than the crosslinked below temperatures of about 300°C. The data are given in several tables and graphs.

1/1

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1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--SHRINKAGE AND THERMAL EXPANSION OF ORGANOSILICON COMPOUND POLYMERS  
-U-  
AUTHOR--(03)-KISELEV, B.A., STEPINA, I.A., ABLEKOVA, Z.P.  
COUNTRY OF INFO--USSR  
SOURCE--PLAST. MASSY 1970, (3), 18-20  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--THERMAL EXPANSION, SILOXANE, POLYMER BINDER, POLYMER  
CROSSLINKING  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/0668 STEP NO--UR/0191/70/000/003/0018/0020  
CIRC ACCESSION NO--AP0119576  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119576

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SHRINKAGE OF ORGANOSILICON BINDERS, E.G., POLY(METHYLSILOXANES) (I), POLY(METHYLPHENYLSILOXANES) (II), AND POLY(PHENYLSILOXANES) (III), WAS STUDIED DURING HARDENING BY A THERMOMECH. METHOD (V. A. KARGIN, 1960). THE LINEAR EXPANSION COEFFS. (ALPHA) OF I, II, AND III WERE DETD. AS A FUNCTION OF TEMP. II AGES AT 200-400DEGREES FOR 10-100 HR HAD A SLIGHTLY LOWER ALPHA, PRESUMABLY DUE TO FURTHER CROSSLINKING.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--OBTAINING CYCLIC VOLT AMPERE CHARACTERISTICS ON A TSLA  
OSCILLOPolarOGRAPH -U-  
AUTHOR-(02)-MIKHAYLOV, V.N., KISELEV, B.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZAVOD. LAB. 1970, 36(2), 162-3  
DATE PUBLISHED-----70

K

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS  
TOPIC TAGS--OSCILLOPolarOGRAPH, VOLT AMPERE CHARACTERISTIC, OXIDATION  
REDUCTION REACTION, DROPPING MERCURY ELECTROD/(U)TSLA OSCILLOPolarOGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAme--1989/0918 STEP NO--UR/0032/70/036/002/0162/0163

CIRC ACCESSION NO--AP0107447

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0107447

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUXILIARY ELECTRONIC EQUIPMENT FOR THE OSCILLOPOLAROGRAPH TSLA IS DESCRIBED IN DETAIL. THE IMPROVED OSCILLOPOLAROGRAPH IS SUITABLE FOR STUDYING BOTH OXIDN. AND REDN. PROCESSES ON DROPPING HG ELECTRODE. FACILITY: INST. FOTOSIN., PUSHCINO ON OKA, USSR.

UNCLASSIFIED

USSR

KISELEV, D. F., and FIRSOVA, M. M., Moscow State University imeni M. V. Lomonosov

"Measurement of the Piezoelectric Coefficients of Lanthanum Niobate by Means of an Interferential Dilatometer"

Leningrad, Fizika Tverdogo Tela, Vol 15, No 1, Jan 73, pp 279-281

Abstract: Measurements were conducted of the static piezoelectric moduli of  $\text{LiNbO}_3$  with the use of the inverse piezoelectric effect; in other words, an investigation was made of the deformation of the specimen under the action of a constant electrical field. The experimental installation is described and illustrated by a schematic diagram. The measurement results are presented in a table, and are compared therein with the data of other authors. Attention is drawn to lack of coincidence among the results of various authors. 1 figure, 1 table, 9 references.

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USSR

UDC: 662.998:536.4

BLAGINYA, F. V., KISELEV, G. A., KUTS, S. M., NIKIFOROV, D. S.,  
and SHADRIN, Yu. K.

"Equipment for Investigating the Thermophysical Characteristics of  
Materials by Quasi-Stationary Methods"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR--  
Seriya Tekhnicheskikh Nauk, No 3, 1972, pp 39-43

Abstract: Two types of devices are described for investigating the thermophysical characteristics of heat-insulating materials by the complex quasi-stationary method in a broad temperature range and with the dependence of the characteristics on the temperature taken into account. In addition, a system has been developed for automatically controlling the temperature in these devices by realizing the condition for the quasi-stationary mode in the 77-2000° K range. The devices are of the plane and cylindrical types, the cross sectional diagrams of each being given. Also shown is the block diagram of the equipment for programmed automatic control, in which high-accuracy temperature regulator blocks of the VRT-2 type are used. The authors are connected with the Institute of Theoretical and Applied Mechanics, in Novosibirsk.

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Industrial

USSR

KORSHUNOV, G. S., KISELEV, G. A., Tomsk

"On Possibility of Using Water as Working Medium of Nanosecond Peaking Discharger"

Moscow, Electronnaya Obrabotka Materialov,  
No. 1 (37), 1971, pp 40-45

Abstract: The use of electric spark in water is becoming common for crushing and pulverizing rock and other purposes.

The experimental investigation of the spark gap in water has been conducted in order to explore the possibility of reducing the duration of the high-voltage pulse to several nanoseconds. A coaxial discharger with water circulation was used. Oscillograph records of pulses were taken. The pulse amplitude and the duration of the pulse

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USSR

KORSHUNOV, G.S., et al, *Electronnaya Obrabotka Materialov*, No 1 (37), 1971, pp 40-45

front decreased with the increase of the spark gap. Experimental and calculation results of the spark voltage as a function of circuit impedance/spark gap resistance ratio agreed closely.

It is concluded that it is possible to use a water spark gap for nanosecond peaking of the high-voltage pulse front.

2/2

1/2 026 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--THE EFFECT OF COMPRESSION OF THE OCULAR HEMODYNAMICS -U-  
AUTHOR--(02)-CHRUBANOVA, E.K., KISELEV, G.A.   
COUNTRY OF INFO--USSR  
SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 2, PP 58-64  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--EYE, HEMODYNAMICS, PRESSURE EFFECT  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REFL/FRAME--1986/0692 STEP NO--UR/0357/70/000/002/0058/0064  
CIRC ACCESSION NO--AP0102676  
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102676

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AMOUNT OF BLOOD FILLING THE EYE WAS MEASURED ON ITS COMPRESSION WITH VARIOUS PLUGGING WEIGHTS, BY MEANS OF BAYAR'S OPHTHALMODYNAMOMETRY AND BY EXERTING PRESSURE ON MAJOR CERVICAL VESSELS. THE PLUNGER'S WEIGHT FAILED TO AFFECT THE MAGNITUDE OF THE OCULAR PULSE. COMPRESSION OF THE EYEBALL WITH A FORCE OF 35 G AUGMENTED THE PULSE PRESSURE AMPLITUDE AND BROUGHT DOWN THE VOLUMINAL PULSE IN HEALTHY PERSONS AND IN GLAUCOMATOUS PATIENTS. COMPRESSION WITH FORCE OF 50 G REDUCED THE CALIBER OF RETINAL VESSELS, THIS CALIBER INCREASING BY COMPARISON WITH THE INITIAL ONE ON DISCONTINUANCE OF COMPRESSION. DURING COMPRESSION OF CERVICAL VEINS THE AMPLITUDE OF THE EYE PULSE INCREASED, WHILE COMPRESSION OF THE COMMON CAROTID ARTERY BROUGHT THE INTRAOCULAR TENSION DOWN WITH SUBSEQUENT EXTINCTION OF THE EYE PULSE. THE DATA GATHERED BY THE AUTHORS EVIDENCE THAT COMPRESSION OF THE EYEBALL AND OF MAJOR CERVICAL VESSELS EXERCISES A DEFINITE INFLUENCE ON THE OCULAR HEMODYNAMICS.

UNCLASSIFIED

USSR

K UDC 621.357.1:661.418(088.8)

KONONCHUK, T. I., KISELEV, G. P., RED'KO, L. P., BONDARENKO, N. V.  
SHAKHNOVSKAYA, M. Z.

"electrolytic Method of Preparing Chlorine and Alkali Using a Mercury Cathode"

Translation: A patent has been issued for an electrolytic method of preparing  $Cl_2$  and alkali using an Hg-cathode and introducing into

the electrolyte additives which promote a reduction in the liberation of  $H_2$  in the bath. To expand the variety of additives, polyacrylamide is used as an additive in amounts of 0.01-10 mg/liter. Data characterizing the action of polyacrylamides of various specimens on the extent of reduction of hydrogen liberation are cited. V. N. Kudryavtsev

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USSR

DVORKIN, V. Ya., and KISELEV, G. V.

"The Effects of Intoxication With Organophosphorus Inhibitors of Cholinesterase on the Metabolism of Individual Phospholipid Fractions in the Rat Brain"

Byul. Eksperim. Biol. i Med., Vol 74, No 11, 1972, pp 51-53 (from Referativnyy Zhurnal -- Biologicheskaya Khimiya, No 5, 1973, Abstract No 5F2319)

Translation: Intoxication of rats with preparation LG-63 (an organophosphorus inhibitor of cholinesterase) in sublethal doses, 5 mg/kg, did not significantly alter the rate of phosphate group metabolism of the phospholipid fractions in the brain, but did decrease the content of triphosphoinositides by 8%, while increasing the content of the diphosphoinositides by 14%. These changes are regarded as reflecting the metabolic reaction of the brain tissue to hypoxia which develops during intoxication with LG-63.

1/1

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RISELEV, G.V.

EFFECTS OF LSD, CHLORPROMAZINE, AND ORGANOPHOSPHOROUS  
CHOLINESTERASE INHIBITORS ON BRAIN

JPRS 58003  
17 January 1973

3

Selected articles from the Russian-language journal Dyul'ten,  
Experimental'noy Biologii i Meditsiny, No 11, 1972, Moscow.

CONTENTS

Interaction of the Effects of Lysergic acid Diethylamide and Chlorpromazine on Individual Neurons of the Hippocampus and Molecular Formation (T. T. Bondarenko).....	PAGE 1
Metabolism of Individual Phospholipid Reactions in the Brain of Rats Intoxicated With Organophosphorus Cholinesterase Inhibitors (V. Ia. Dvorkin, G. V. Kiselev).....	7

(I - USSR - C)



UDC: 621.317.73(088.8)

USSR

TIKHOMIROV, V. P., LEVINSON, B. A., KISELEV, I. B., SHELKOVNIKOV,  
A. A., and DVORYANICHKOV, I. A.

"Automatic Device for Measuring the Input Resistance of a Long  
Line"

/N.-i. in-t teploenerg. priborostr. / Avt. sv. USSR (Scientific Re-  
search Institute of Thermal Energy and Instrument Manufacture,  
Author's Certificate USSR) Class 21a4, 74, (G01 r 27/04),  
No. 270842, Application 21.08.68, Publication 20.08.70 (from  
RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3A388P)

Translation: An automatic device is proposed for measuring the in-  
put resistance of a long line, containing a UHF oscillator, a  
modulator, a detector, an amplifier, a phase-sensitive rectifier,  
and a compensating parametric controlling element. The proposed  
measuring device is distinguished in that, with the purpose of  
improving the accuracy of measurement, a parametric controlling  
element is connected in series with the measured section of the  
line. E. L.

1/1

1/2 030 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--FIREPROFF ALUMINA -U-

AUTHOR--(04)-KISELEV, I.M., ZROZHEVSKIY, V.T., SHAKHNOVICH, I.G., SAZHIN,  
V.S.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,211

REFERENCE--OTKRYTIYA, IZJUBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, ALUMINA, CHEMICAL COMPOSITION, KAOLIN, FIRE  
RESISTANT MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1830

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AAC132095

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0132095

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO OBTAIN AN ALUMINA FIREPROOF MATERIAL EFFECTIVE TO 1950DEGREES, KAOLIN IS ROASTED AT 1050-1200DEGREES FOR 1-3 HR. THE RESULTING PRODUCT IS TREATED WITH AN ALK. SOLN. OF 100-40 G NA SUB2 O-L. AT 95-105DEGREES FOR LARGER THAN 30 MIN, AND WASHED UNTIL THE RESIDUAL CCNTENT OF ALKALI IS SMALLER THAN 1PERCENT.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--PROPERTIES OF PRODUCTS OF THE CARBONATION OF ALKALINE SILICEOUS  
SOLUTIONS -U-  
AUTHOR--KISELEV, I.M. *K*  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1051-4  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--MINERAL, ALKALI, SILICA, ENDOTHERMIC EFFECT, EXOTHERMIC EFFECT  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1999/1082 STEP NO--UR/0078/70/015/004/1051/1054  
CIRC ACCESSION NO--AP0123075

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2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123075

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DTA OF A MIXT. OF NA SUB2 CO SUB3, SIO SUB2, AND SMALL AMTS. OF AL HYDROXIDE SHOWED ENDOTHERMIC PEAKS CORRESPONDING TO LOSS OF H SUB2 O AT 140 AND 290DEGREES, DECOMPN. OF NA SUB2 CO SUB3 AT 770-830DEGREES, AND THE EXOTHERMIC PHASE TRANSITION OF SIO SUB2 AT 590DEGREES. IR ABSORPTION SPECTRA REVEAL THAT THE AL HYDROXIDE EXIST IN THIS MIXT. AS BOEHMITE (ALOOH) HAVING MAX. AT 503-5, 626, 745-55, 1065, 1080, 1138-40, 1145-50, AND 3079 CM PRIME NEGATIVE1. IN THE MIXT. THE OH GROUPS HAVE VIBRATIONAL FREQUENCIES AT 1600-1700, 1170-90, 1640-60, AND 2800-3600 CM PRIME NEGATIVE1.

UNCLASSIFIED

KISELEV, I. N.

20:54RS 85013  
0.5 JAN 1972  
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From 9/16/72  
W. O. ...

SCIENTIFIC CONTACTS BETWEEN ACADEMIES OF SCIENCES OF THE USSR AND THE REPUBLIC OF CUBA

Article by I. N. Kiselev, Moscow, Yestnik Akademii Nauk SSSR, Russian, No 11, November 1971, pp 94-97]

Talks were held in Havana on 9-20 July between delegations of the Academy of Sciences USSR and Cuban Academy of Sciences. The delegation of Cuban scientists was headed by Yliso Soyans Sanchez, vice-president of the Cuban Academy of Sciences, while the Soviet delegation was headed by Academician A. A. Beyer, member of the presidium of the Academy of Sciences USSR. Antonio Nuñez Jimenez, president of the Cuban Academy, took active part in the talks. The subject of the discussion was scientific co-operation in the period 1969-1970 and planned joint efforts for the period 1971-1973.

As is well known, the Academy of Sciences of the Republic of Cuba was founded in 1963: in May 1963 an agreement on scientific cooperation between the young Cuban Academy and the Academy of Sciences USSR was signed in Moscow. The term of the agreement was 5 years. In the fall of 1968 a new, carefree agreement was signed in Moscow.

An important part of the program of cooperation by the scientists of the two academies is occupied by the study of Cuba's rich natural resources. Formerly this study had been conducted by firms from capitalist countries, chiefly the United States, with a profit motive, for which reason the results of these studies were not turned over to the Cubans. Following the victorious revolution the young state was compelled to reinventory and study the island's resources. But there are not enough trained indigenous personnel for such a project; Soviet scientists, true to their international duty, are gladly assisting their Cuban colleagues. All studies are being conducted on the basis of full equality between the parties, and the results are immediately made available to the Cubans.

In 1965 a book entitled Cuba's Scientific Resources and Timir Ushilin in the Foreigner was published in Havana. This book was prepared by the

KISELEV, I. N.

Scientific

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25 JAN 1972

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KISLEV, I. N.

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SCIENTIFIC CONTACTS BETWEEN ACADEMIES OF SCIENCES OF THE USSR AND THE  
REPUBLIC OF CUBA  
Article by I. N. Kiselev, Vostochny Akademiicheskii Vestnik, Moscow,  
No. 11, November 1971, pp 64-77

Talks were held in Havana on 7-20 July between delegations of the  
Academy of Sciences of the USSR and Cuban Academy of Sciences. The delegation of  
Cuban scientists was headed by Ilieo Soyuz Sanchez, vice-president of the  
Cuban Academy of Sciences, while the Soviet delegation was headed by  
Academy A. A. Ilyev, member of the presidium of the Academy of  
Sciences USSR, Deputy Minister General, president of the Cuban Academy, took  
active part in the talks. The subject of the discussion was scientific co-  
operation in the period 1969-1970 and planned joint efforts for the period  
1971-1973.

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personnel for such a project. Soviet scientists, true to their international  
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conducted on the basis of full equality between the parties, and the re-  
sults are immediately made available to the Cubans.

In 1965 a book entitled Sobor's Scientific Resources and Their Utiliza-  
tion in the Economy was published in Havana. This book was prepared by the

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USSR

UDC 621.357.8:669.71

KISELEV, I. P.

"The Variability of Some Properties of Anode Aluminum Oxides Upon Heating"

Tr. Kazan. aviata. in-ta (Works of the Kazan Aviation Institute), Vyp 148, 1972, pp 17-22 (from Referativnyy Zhurnal-Khimiya, No 8(II), 1973, Abstract No 8L282)

Translation: Data are presented for the influence of heating for two hours at a temperature of 100-300° on the corrosion resistance, porosity, wear resistance, and fracture direction of anode oxides formed in the alloy AL-11 in a sulfuric acid electrolyte under standard conditions. Corrosion resistance properties of the anode oxide practically did not change upon heating to 280°, but decreased abruptly upon heating to higher temperatures. Upon heating the anode oxide for two hours to a temperature of 300°, its stability to electrical breakdown and frictional resistance did not change. The porosity of the oxide increased with increasing temperature.

1/1

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1/2 029 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ADSORPTION PROPERTIES OF AN ANODIC OXIDE FILM ON ALUMINUM STUDIED  
BY THE LABELED ATOM METHOD. 15. INJECTION OF ELECTROLYTE ANIONS INTO  
AUTHOR--(03)-BELOV, V.T., BOGOYAVLENSKIY, A.F., KISELEV, I.P.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(2), 190-3  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, CHEMISTRY  
TOPIC TAGS--ELECTROLYTE, ALUMINUM OXIDE, ANODIC OXIDATION, ANODIZATION,  
SULFUR ISOTOPE, TRACER STUDY, OXIDE FILM  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3005/0845 STEP NO--UR/0153/70/013/002/0190/0193  
CIRC ACCESSION NO--AT0132935  
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132935

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM PRIME36 S TRACER TESTS, SO SUB4 PRIME2 NEGATIVE INTRODUCED INTO AN ANODIC OXIDE FILM DURING FILM FORMATION, BY ANODIZING FOR 20 MIN AT 20DEGREES AND 1 A-DM PRIME2 IN 20PERCENT H SUB2 SO SUB4, IS REMOVED TO A NEGLIGIBLE EXTENT BY CONTACT WITH EITHER DIST. H SUB2 O OR 0.1M NA SUB2 SO SUB4 AT PH 5.6-5.8 FOR 1-12 HR. BY IMPOSITION OF AN ELEC. CURRENT AT 25 V DURING SEALING OF AN ANODIC FILM WITH PRIME35 S-TAGGED 0.1M NA SUB2 SO SUB4, THE REMOVAL OF SO SUB4 PRIME2 NEGATIVE BY WASHING IS INHIBITED MARKEDLY. THIS IS ATTRIBUTED TO MIGRATION OF SO SUB4 PRIME2 NEGATIVE IONS MORE DEEPLY INTO THE OXIDE FILM. RETENTION OF ANIONS BY AN OXIDE FILM IS CLASSIFIED AS BY ADHESION, BY SORPTION (ENTRAPPED IN CAPILLARIES), OR STRUCTURAL. THE CHARACTERISTICS OF THESE PROCESSES ARE DISCUSSED. FACILITY: KAZAN. AVIATS. INST., KAZAN, USSR.

UNCLASSIFIED

USSR

UDC 539.1:621.3.082

KUROCHKIN, S. S., KISELEV, L. G., and MURIN, I. D.

"Vector System of Instruments and Units for Nuclear Electronics"

Tr. Coyuz. NII priborostr. (Transactions of the All-Union Scientific Research Institute of Instrument Building) Vyp 18, 1972, pp 90-103 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 1, 1973, Abstract No 1.32.1479)

Translation: The features of the "Vector" system of instruments and units for nuclear electronics of the third generation are examined. High-precision microcomponents and discrete elements, of precision printed circuitry are the basis of the "Vector" system. According to the principles of construction, the logic functions, norms for signals and junctions of the "Vector" system are similar to the foreign systems CAMAC and NIM, however, the system is designed on the basis of native standards and completed articles. The features of the system connected with this and accepted norms of projection are considered. The structure of the system and the basic characteristics of its instruments and units are analyzed. (3 illustrations, 10 bibliographic entries, resume)

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USSR

UDC 621.391.814.23

KISELEV, I.K., MAMONOV, V.A., MESHKOV, A.A.

"Method Of Detection Of Sections Of Pulse Noise Formation In Communication Channels"

USSR Author's Certificate No 307527, filed 10 Nov 69, published 23 Aug 71  
(from RZh: Elektrosvyaz', No 2, Feb 1972, abstract No 2.64.75P)

Translation: It is known that detection of sections of formation of pulse noise in communication channels is performed by distortions of the frequency characteristics of the channel at retransmission points, with subsequent analysis of the noise spectra at the terminal station. Additional equipment at the retransmission sections is required for this; detection of the noise is conducted only at one retransmission point and it is impossible to determine the sections of noise formation in channels occupied with transmission. It is proposed to make a frequency selection of the noise in two frequency subbands of the channel, which is chosen with different dependences of the residual attenuation on the length of the channel. With the presence of noise, stored energy occurs, entering into each subchannel; analyzing the ratio of these magnitudes it is possible to determine the distance to the place of formation of the noise. N.L.

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Communications

UDC: 621.391.833.44:621.317.743

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KISELEV, L. K.

"A Method of Determining Sections Where Pulse Interferences Arise in Audio Frequency Channels"

Sb. nauchn. tr. TsNII svyazi (Collected Scientific Works of the Central Scientific Research Institute of Communications), 1970, vyp. 1, pp 50-59 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A261)

Translation: The elimination of sources of pulse interference plays an important part in solution of the problem of improving the reliability of transmitted information and increasing the traffic handling capacity of communications channels. However, in view of the extensive length of data transmission channels and the distribution of pulse interference sources throughout the entire length of the main artery, difficulties arise in determining the causes of development of these interferences. A new method of determining the segments of development of pulse interferences is discussed which is based on inspection of segments from one low-frequency transducer to the other and using the property of pulse interference that its effect on the communications channel is analogous to that of a brief pulse. The segment where pulse interference develops is determined from deformation

KISELEV, L. K., Sb. nauchn. tr. TsNII Svyazi, 1970, vyp. 1, pp 50-59

of the interference pulse spectrum or from the form of reaction of the channel with a change in the frequency characteristics of individual segments. The author gives the results of linear tests of the device for determining segments of origin of pulse interference. The distribution of pulse interference by segments is shown, and some causes of its development are explained. A. K.

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USSR

UDC: 621.391:519.2

KISELEV, L. K., MORGACHEV, Ye. T.

"Comparative Effectiveness of Two Methods of Monitoring Pulse Interference in Audio Frequency Channels"

Sb. nauchn. tr. TsNII svyazi (Collected Scientific Works of the Central Scientific Research Institute of Communications), 1970, vyp. 1, pp 60-70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A54)

Translation: The authors discuss two methods of monitoring pulse interference in transmission of discrete information: monitoring with respect to the envelope, and monitoring with the aid of a filter whose passband is selected on the edge of the passband for the channel. The effectiveness of monitoring pulse interference with respect to two parameters is evaluated: with respect to the coefficient of undetected errors, and with respect to the coefficient of false erasures. The results of linear tests of instruments which realize these methods are given. Resumé.

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RISEHEV, L. Ye.

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Soviet Inventions Illustrated, Section II Electrical, Derwent,

236862 MEMORY DEVICE, one of whose variants is shown in fig. 1. It comprises two-hole transfluxors, but it can be built with storage elements of any other type, e.g. with four-hole elements.

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The device comprises two-hole transfluxors (1), digit blocking wires (2) and unblocking wires (3), number inhibition wires (4), controlled by numerical code distributor (5). The starts of the digit unblocking wires are connected to the corresponding outputs of the address digit decoder, and their ends are joined at a common point and connected by a distributor to the start of the first inhibition wire (any of these wires can be counted as the first), whose end is connected to the start of the second number inhibition wire, and so on over the

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whole memory device in consecutive cycles. The information introduction into corresponding digits of all numbers is done simultaneously in one writing cycle.

The special feature of the proposed device is that the digit blocking wires (2) pass consecutively through storage elements of corresponding digits of all numbers, and the digit unblocking wires (3) are consecutively looped around the connecting pieces between holes in the storage elements.

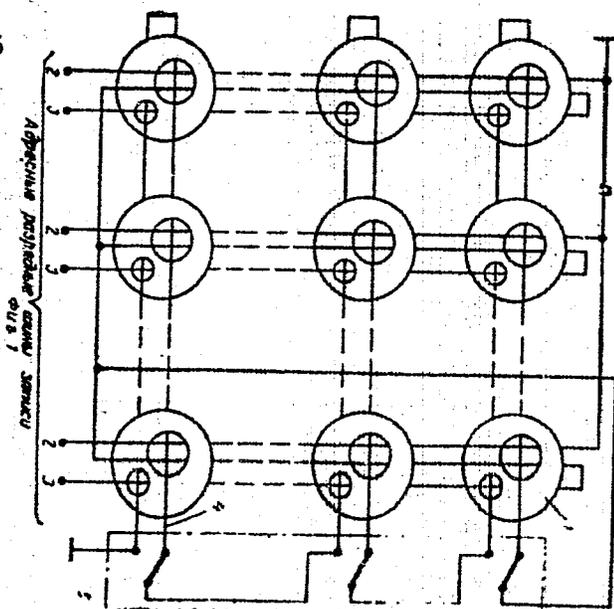
2.12.67 as 1200361/18-24. NISNEVICH, D.G. et al.  
(27.6.69) Bul 7/3.2.69. Class 42m. Int. Cl. G 06f.

Authors: Nisnevich, D.G.; Kiselev, L.Ye.

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UDC: 621.9.048

KONOVALOV, Ye. G., Academician of the Academy of Sciences of the BSSR, KOS-  
TYUKOVICH, S. S., KISELEV, M. G., Belorussian Polytechnical Institute

"Reducing Forces of Sliding Friction by Introducing Longitudinal Ultrasonic  
Vibrations"

Minsk, Doklady Akademii Nauk BSSR, Vol 17, No 5, May 73, pp 420-422

Abstract: The paper gives the results of investigations of the influence of longitudinal ultrasonic vibrations on reducing forces of sliding friction as a function of the normal pressure, the materials of the friction couple, the rate of sliding, the intensity of the vibrations, and the lubricant. It is found that forces of sliding friction are reduced in all cases by introducing ultrasonic longitudinal vibrations. When ultrasonic vibrations which make a vertical right angle with both the force of friction and the contact surface are introduced, the rate of sliding has no appreciable effect on the action of the vibrations. Lubricant increases the effectiveness of ultrasonic vibrations by a factor of approximately 50%. Increasing the intensity of the ultrasonic vibrations reduces forces of friction in all cases. Further research on sliding friction in an ultrasonic field is recommended before practical application of this method.

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Acc. Nr: **048370**  
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Abstracting Service:  
INTERNAT. AEROSPACE ABST

Ref. Code:  
**5-70 2190293**

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**A70-24319 #** Small vibrations of systems with a solar sail (O malykh kolebaniyakh sistem s solnechnym parusom). N. D. Dzhumanaliev and M. I. Kisilev. *Kosmicheskie Issledovaniia*, vol. 8, Jan.-Feb. 1970, p. 148. In Russian.

Approximate solution of the problem concerning the effect of small natural vibrations of a system propelled by a solar sail on the motion along a heliocentric orbit. It is found that the resonance effects arise during a perturbed motion when the natural vibrations of the sail are equal to its angular rotation rate. Z.W.

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**19800078**

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AGEYEV, A. N., KISELEV, M. I., OVAKIMYAN, R. N.

"On the Flutter of a Current-Carrying Shell"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 6, Jun 1970,  
pp 1159-1160

Abstract: The stability of current-carrying structures in high-velocity flows of a cooling liquid is studied, since it represents a subject of definite practical interest. The stability of a cylindrical, ideally conducting, current-carrying shell containing a current of ideal incompressible and nonconducting liquid is considered. It is shown that the magnetic field produced by the electric current and the flow of the liquid, as would be expected, lower the stability of the shell. The equation for small radial perturbations in the shape of the cylindrical shell is solved and expressions are given for values of the flow velocity and current under which the system becomes unstable. It is stated that conditions for loss in stability for a shell of finite length can also be established without difficulty.

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72 025 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--MECHANISM OF THE FORMATION OF LATEX FILMS FROM VINYLIDENE CHLORIDE  
COPOLYMERS AT ROOM TEMPERATURE -U-  
AUTHOR--(05)-GUL, V.E., DONTSOVA, E.P., SNEZHKO, A.G., ROSSINA, T.B.,  
KRISELEV, M.R.  
COUNTRY OF INFO--USSR  
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(8), 671-6  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
PIC TAGS--LATEX, VINYLIDENE RESIN, VINYL CHLORIDE, COPOLYMER, PHASE  
TRANSITION, VISCOELASTICITY, POLYMER STRUCTURE, PLASTIC FILM,  
PERMEABILITY MEASUREMENT/(U)VIKH65 VINYL CHLORIDE COPOLYMER  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
DOCX REEL/FRAME--1992/0310 STEP NO--UR/0459/70/012/003/0671/0676  
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UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--16OCT70

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RC ACCESSION NO--AP0111504

STRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMOMECH. CURVES (PLOTS OF DEFORMATION VS. TEMP.) SHOWED THAT VIKH-65 (35:65 VINYL CHLORIDE VINYLIDENE CHLORIDE COPOLYMER) FILMS HAVE A PHASE TRANSITION POINTS AT 3-8DEGREES (ONE GLASS STATE TO ANOTHER), 30-40DEGREES (GLASS TO VISCOELASTIC STATE), AND 70-80DEGREES (MELT FLOW POINT). THE KINETICS OF WATER VAPOR ADSORPTION, FILM DRYING, AND ELECTRON MICROSCOPY SHOWED THAT EVEN IN THE FILMS FORMED FROM MELTS PREHEATED LARGER THAN OR EQUAL TO 80DEGREES THE GLOBULES DO NOT COALESCE. THE PERMEABILITY OF THE FILMS DECREASES WITH THE TEMP. OF THE MELTS. THE MECH. STRONG FILMS OF LOW PERMEABILITY, PREPD. FROM MELTS PREHEATED TO 50-60DEGREES, HAVE A DIFFUSE BOUNDARY LAYERS WHICH PENETRATE INTO THE GLOBULES.

FACILITY: MOSK. TEKHNDL. INST. MYAS. MOLOCH. PROM., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

*AP0036540*

Ref. Code: UR 9069

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PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1,  
PP 137-140

EFFECT OF THE CROSS-LINK DENSITY  
AND SUPERMOLECULAR STRUCTURES ON THE PROPERTIES OF POLYURETHANE  
COATINGS

G. A. Yablokov, L. A. Sukhareva, M. R. Kliselev, P. I. Zubov

Summary

The kinetics of the build up of internal stresses and the rate of formation of physical and chemical bonds during the production of polyurethane coatings have been correlated with the supermolecular structure nature and the cross-link density. The effect of the chemical bonds distribution inside supermolecular structures and between them on the physico-mechanical properties of coatings and the swelling kinetics has been studied.

*D.V.*

*4*

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19721388

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UDC 669.715'3:539.4:539.377

BOCHVAR, O. S., KISELEV, N. I.

"Effect of Deformation, Temperature, and Time Factors on the Structure and Properties of the Alloy"

V sb. Struktura i svoystva legk. splavov. (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 101-105 (from RZh-Metallurgiya, No 4, Apr 73, Abstract No 4I639)

Translation: A study was made of the effect of the macrostructure of the ingots and also the deformation conditions on the structure and properties of heat-treated D1 alloy. The initial macrostructure of the ingot affects the properties of the deformed heat treated alloy D1. The lower values of the strength characteristics and anisotropy of  $\delta$  and  $\psi$  are noted in stampings obtained from cast billets homogenized at  $500^{\circ}$  for 12 hours having a mixed macrostructure (globular and feathery). Compacting at high temperatures does not eliminate the twins of the cast structure of the D1 alloy. The mechanical twins, which are a characteristic attribute of the "feathery" or "fan-like" structure are retained in the structure of the D1 alloy undergoing hot compacting, stamping at  $460-440^{\circ}$ , and quenching from  $500^{\circ}$ . 3 illustrations, 4 tables, and a 7-entry bibliography.

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